

Study on Production of Transgenic Pig Harboring Tissue Plasminogen Activator Gene

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This study was conducted to produce transgenic pig harboring human tissue plasminogen activator (tPA) gene. Two different tPA genes containing bovine β -casein promoter and mouse uroplakin promoter were prepared for microinjection and confirmed the expression level of tPA protein from the CHO (Chinese hamster ovary) cell lines by gene transfection. Concentration of tPA expression from the six cell lines (all of CHO cells) were average 212.4 ng/ml. Reconstructed DNA to used the CHO cell were microinjected into the pronuclei of *in vivo* embryos. The total of 2,307 zygotes were collected from 95 donors and 1,851 embryos were in 1-cell stage which were visualized the pronuclei for DNA microinjection. The concentration of linear DNA was 2.0 ng per microliter and injected into zygotes with two pronuclei on an inverted Nikon microscope equipped with narishige micromanipulator and modulation contrast optics. The 541 embryos injected with bovine β -casein promoter-tPA were transferred to 22 recipients. The 1,154 embryos injected with mouse uroplakin promoter-tPA were transferred to 51 recipients. Sixty nine offspring from 9 delivered sows were produced. We analysed the transgenes with PCR methods from 69 offsprings, but could not detect the PCR product from piglet tails DNA.

Key words) *Pig, Human tissue plasminogene activator, b β -casein, Uroplakin II*